CLAIMS:

1. A scroll fluid machine comprising:

a stationary scroll member;

an orbiting scroll member to mesh with the stationary scroll member;

a driver for driving the orbiting scroll member via a crankshaft having an eccentric pin portion;

a frame joined with the stationary scroll member and having a shaft support to support the crankshaft, the shaft support for the crankshaft being arranged only on a side closer to the orbiting scroll member than the driver;

an Oldham's ring for preventing the orbiting scroll member from rotating on its axis;

a closed vessel receiving these elements;

a space formed by the frame, the stationary scroll member, the orbiting scroll member, and so on;

a further frame provided in the space to be separable from the frame;

a shaft support of the orbiting scroll member to engage with the eccentric pin portion of the crankshaft;

a seal portion formed between an end surface of the shaft support of the orbiting scroll member and the further frame to divide the space into a central space substantially under a discharge pressure and an outer peripheral space under a lower pressure than that

in the central space;

an oil feed system, by which a lubricating oil accumulated in the closed vessel is supplied to the shaft support for the crankshaft and the shaft support of the orbiting scroll member; and

a space, in which a balance weight is arranged, formed between the frame and the further frame to be communicated to the central space.

2. A scroll fluid machine comprising:

a compression mechanism part composed of a stationary scroll member, an orbiting scroll member to mesh with the stationary scroll member, compression chambers formed between the both scroll members, and the like;

a driver for driving the compression mechanism part;

a closed vessel receiving the compression mechanism part and the driver to be substantially under a discharge pressure;

a crankshaft rotated by the driver and having an eccentric pin portion for causing the orbiting scroll member in an orbiting movement;

a first frame fixedly mounted in the closed vessel and having a shaft support to support the crankshaft, the shaft support for the crankshaft being arranged only on a side closer to the compression mechanism part than the driver;

an Oldham's ring serving as a mechanism for

preventing the orbiting scroll member from rotating on its axis;

a shaft support of the orbiting scroll member configured to engage with the eccentric pin portion of the crankshaft and to be axially movable;

an oil feed system, by which a lubricating oil is supplied to the shaft support for the crankshaft and the shaft support of the orbiting scroll member;

a space formed by the first frame, the stationary scroll member, the orbiting scroll member, and so on;

a second frame provided in the space to be separable from the first frame;

a seal portion making an end surface of the shaft support of the orbiting scroll member a seat surface and providing sealing between the seat surface and the second frame to thereby make separation in pressure between a central space and an outer peripheral space; and

a space, in which a balance weight is arranged, formed between the first frame and the second frame to be communicated to the central space,

wherein a lubricating oil supplied to the respective shaft supports from the oil feed system flows into the central space or the space, in which the balance weight is arranged.

3. A scroll fluid machine comprising:

a compression mechanism part composed of a

stationary scroll member, an orbiting scroll member to mesh with the stationary scroll member, compression chambers formed between the both scroll members, and the like;

a driver for driving the orbiting scroll member through a crankshaft having an eccentric pin portion;

a first frame having a shaft support to support the crankshaft, the shaft support for the crankshaft being arranged only on an upper side of the driver;

an Oldham's ring for preventing the orbiting scroll member from rotating on its axis;

a closed vessel receiving these elements to be substantially under a discharge pressure;

a space formed by the first frame, the stationary scroll member, the orbiting scroll member, and so on;

a second frame provided in the space to be separable from the first frame;

a seal portion formed between the orbiting scroll member and the second frame to divide the space into a central space substantially under a discharge pressure and an outer peripheral space under a lower pressure than that in the central space;

an oil feed system, by which a lubricating oil accumulated in a lower portion of the closed vessel is supplied to the shaft support for the crankshaft and

the shaft support of the orbiting scroll member;

a lower space formed between an underside of the second frame and the first frame to be communicated to the central space communicated in pressure to the oil feed system, and

a balance weight arranged in the lower space.

4. A scroll fluid machine comprising:

an orbiting scroll member having a spiral scroll wrap, which is provided upright on an end plate;

a stationary scroll member having a spiral scroll wrap, which is provided upright on an end plate;

compression chambers formed by meshing of the orbiting scroll member and the stationary scroll member with each other, and decreased in volume with orbiting movement of the orbiting scroll member;

drive means for orbitingly driving the orbiting scroll member through a crankshaft having an eccentric pin portion;

a first frame having a shaft support to support the crankshaft, the shaft support for the crankshaft being arranged only on a side of the drive means to the compression chambers;

an Oldham's ring for preventing the orbiting scroll member from rotating on its axis;

a shaft support of the orbiting scroll member to engage with the eccentric pin portion of the crankshaft;

a space formed by the first frame and the

stationary scroll member to arrange therein the orbiting scroll member and the Oldham's ring;

a seal portion dividing in pressure the space into a central space and an outer peripheral space and making an end surface of the shaft support of the orbiting scroll member a seat surface;

an oil feed system, by which a lubricating oil substantially at a discharge pressure is supplied to the shaft support for the crankshaft and the shaft support of the orbiting scroll member; and

a closed vessel receiving therein these elements to be substantially under the discharge pressure; wherein

there is provided a second frame separable from the first frame and defining the seal portion between it and the end surface of the shaft support of the orbiting scroll member, and

the seal portion, which is defined by the end surface of the shaft support of the orbiting scroll member and the second frame, separates a central space, into which the lubricating oil having been supplied to the respective shaft supports from the oil feed system flows and which is substantially under a discharge pressure, and an outer peripheral space under a lower pressure than that in the central space, and

a lower space is formed between an upper portion of the shaft support of the first frame and a lower portion of the second frame to be communicated in

pressure to the central space and to be arranged relative to the outer peripheral space under the lower pressure with the seal portion therebetween, and

a balance weight is arranged in the lower space.

5. A scroll fluid machine according to claim 2, wherein the seal portion includes the end surface of the shaft support of the orbiting scroll member and an upper surface of the second frame as seat surfaces, and the first frame and the second frame are mechanically fastened to each other.

6. A scroll fluid machine according to claim 1, wherein the stationary scroll member and the frame are joined to each other by means of mechanical fastening means and positioning means in combination.

7. A scroll fluid machine according to claim 2, the second frame is provided with a support for the Oldham's ring.

8. A scroll fluid machine according to claim 7, wherein the second frame is formed with a key groove for engagement with a key on the Oldham's ring, and a support for a back surface of the orbiting scroll member.

9. A scroll fluid machine according to claim 1, the orbiting scroll member is formed with a support for thrust of the crankshaft on a back surface portion thereof, which is opposed to an end surface of the eccentric pin portion.

10. A scroll fluid machine according to claim 1, the orbiting scroll is formed with small holes for keeping the lubricating oil on a seat surface of the seal portion of the end surface of the shaft support of the orbiting scroll member.

11. A scroll fluid machine according to claim 1, wherein pressure in the outer peripheral space is a suction pressure or an intermediate pressure between the suction pressure and a discharge pressure.

12. A scroll fluid machine according to claim 1, further comprising an oil scavenge pipe for communication between the space, in which the balance weight is arranged, and that portion of the closed vessel, in which the lubricating oil is accumulated.

13. A scroll fluid machine according to claim 1, wherein the oil feed system comprises oil feed passages formed in the crankshaft and an oil feed pump for supplying the lubricating oil to the oil feed passages, and the oil feed passages for supplying the lubricating oil to the shaft support of the orbiting scroll member and the shaft support for the crankshaft are formed separately from each other.

14. A scroll fluid machine according to claim 13, wherein an oil reservoir formed in a lower portion of the closed vessel and the driver are partitioned by a partition, the oil feed pump is mounted on the partition through a pump fixing member, the oil feed pump being driven according to rotation of the

crankshaft, and the oil feed pump is configured to be movable relative to the pump fixing member in axial and radial directions of the crankshaft.